

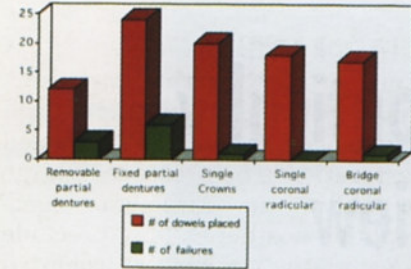
strongest tooth is the one with the most remaining sound dentin used to rebuild the core.

The length of solid tooth needed if a post is required should equal the sum of the biological width

(2.5 mm), the ferrule length (2 mm), the apical seal (4 mm) and the minimal retentive post length (7-8.5 mm). Coronally, solid tooth refers to dentin that is a minimum of 1 mm thick after preparation. Thus the minimal tooth length needed is 15.5 mm. If you do not have 15.5-17 mm of crown-root length the long term prognosis of the tooth is guarded.

**TIMING OF THE PERMANENT RESTORATION**

Due to coronal leakage, which is considered to be a significant etiology in endodontic failure, the temporary sealer must be kept intact during the treatment phase with a permanent restoration completed within 2-3 weeks. TERM, G.I., and IRM are the most leak proof temporary restorations for short periods of time. If the time needed is longer than 3 weeks, then a more permanent restoration is needed.

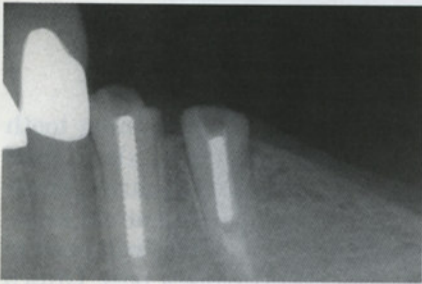


**FIGURE 1** Failure according to abutment type. Diagram illustrates the loss of teeth according to type of abutment in single crown, removable partial denture and fixed partial denture restorations. Observation period was three years.

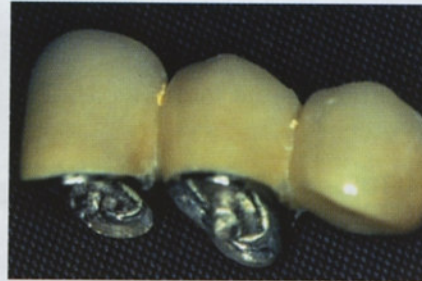


**FIGURE 2** Failed prosthesis due to poor treatment planning.

If a tooth has lost the filling which closed the access opening and it has been exposed to saliva for more than 30 days, it is totally contaminated and may need to be retreated. Retreatment is a judgment call and factors such as a single crown versus a bridge abutment, and the importance of the tooth for the long term survival of the masticatory system are only two of many filters used to make the final decision.



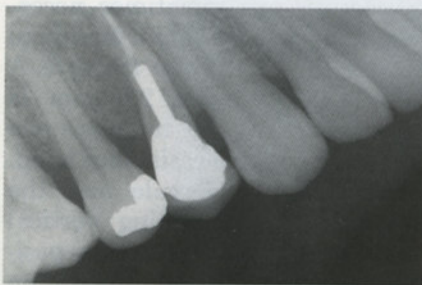
**FIGURE 3** Cantilevers are not recommended.



Remember that not all teeth which have received endodontic treatment need crown coverage.

**FRACTURE PROTECTION**

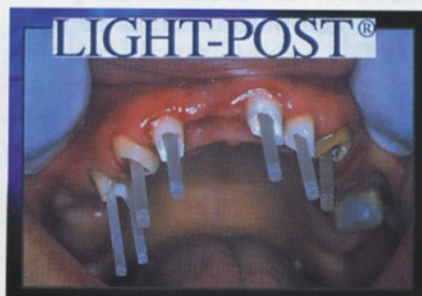
The loss of internal architecture due to the endodontic access opening, removal of filling material, and in particular, loss of marginal ridges makes endodontically treated teeth very vulnerable to fracture. An access opening alone decreases tooth stiffness by 5 %, an occlusal preparation by 20%, loss of 1 marginal ridge by 46% and the loss of 2 marginal ridges by 63%. Endodontically treated teeth have a decrease in proprioceptive response due to the loss of pressoreceptors. The loss of this sensory apparatus may prevent the triggering of a protective response, allowing excessive loads to be applied and resulting in the fracture of non-vital teeth.



**FIGURE 4A** Excessive post space enlargement in 14.



**FIGURE 4B** After loss of 14- excessive access opening made for endos on 13 and 15.



**FIGURES 5A & B** Light-Posts and translucent cores.

Horizontal and oblique fractures usually occur in the upper anterior and vertical fractures in